

What is claimed is:

1. A method for the detection of a fungal pathogen, comprising the steps of:
 - (a) isolating DNA from a plant leaf infected with a pathogen;
 - 5 (b) subjecting said DNA to polymerase chain reaction amplification using at least one primer having sequence identity with at least 10 contiguous nucleotides of an Internal Transcribed Spacer sequence of a *Fusarium* spp.; and
 - (c) detecting said fungal pathogen by visualizing the product or products of said polymerase chain reaction amplification.
- 10 2. The method of claim 1, wherein said fungal pathogen is *Fusarium subglutinans*.
3. The method of claim 1, wherein said fungal pathogen is *Fusarium proliferatum*.
- 15 4. The method of claim 1, wherein the fungal pathogen is *Fusarium verticillioides*.
5. The method of claim 1, wherein the Internal Transcribed Sequence has the nucleotide sequence of SEQ ID NO:5, 6, 7, or 8.
- 20 6. The method of claim 1, wherein at least one primer comprises the nucleotide sequence of SEQ ID NO:9-12, 20 or 21.
7. A method for the detection of a fungal pathogen, comprising the steps of:
 - (a) isolating DNA from a plant leaf infected with a pathogen;
 - 25 (b) subjecting said DNA to polymerase chain reaction amplification using at least one primer having sequence identity with at least 10 contiguous nucleotides of a mitochondrial small subunit rDNA gene from a *Fusarium* spp.; and
 - (c) detecting said fungal pathogen by visualizing the product or products of said polymerase chain reaction amplification.
- 30 8. The method of claim 7, wherein said fungal pathogen is *Fusarium subglutinans*.
9. The method of claim 7, wherein said fungal pathogen is *Fusarium proliferatum*.

10. The method of claim 7, wherein the fungal pathogen is *Fusarium verticillioides*.
11. The method of claim 7, wherein the mitochondrial small subunit rDNA gene sequence has the sequence of SEQ ID NO:1, 2, 3, or 4.
- 5 12. The method of claim 7, wherein at least one primer comprises the nucleotide sequence of SEQ ID NOS:13-20, 23 or 24.
13. The method of claim 7, wherein the primers comprise:
- 10 a) SEQ ID NO:15 and SEQ ID NO:16;
b) SEQ ID NO:14 and SEQ ID NO:18;
c) SEQ ID NO:14 and SEQ ID NO:19; or
d) SEQ ID NO:14 and SEQ ID NO:20.
- 15 14. A diagnostic kit used in detecting a fungal pathogen comprising at least one primer having at least 10 contiguous nucleotides of an Internal Transcribed Spacer sequence of a *Fusarium* spp.
15. A diagnostic kit used in detecting a fungal pathogen comprising at least one primer
- 20 comprising the sequence of SEQ ID NO:9-12, 21 or 22.
16. A diagnostic kit used in detecting a fungal pathogen comprising at least one primer having at least 10 contiguous nucleotides of a mitochondrial small subunit rDNA gene of a *Fusarium* spp.
- 25 17. A diagnostic kit used in detecting a fungal pathogen comprising at least one primer having the nucleotide sequence of SEQ ID NO:13-20, 23 or 24.
18. A diagnostic kit used in detecting a fungal pathogen comprising a pair of primers of
- 30 a) SEQ ID NO:15 and SEQ ID NO:16;
b) SEQ ID NO:14 and SEQ ID NO:18;
c) SEQ ID NO:14 and SEQ ID NO:19; or
d) SEQ ID NO:14 and SEQ ID NO:20.